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# MEMOIRS

OF THE

## TORREY BOTANICAL CLUB.

VOL. III.



PUBLISHED FOR THE CLUB.

FEB., 1892—APRIL, 1893.

46905

Science  
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Britton

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VOL. III.

No. 1.

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FLORA OF WESTERN NORTH CAROLINA  
AND CONTIGUOUS TERRITORY.

BY JOHN K. SMALL and A. A. HELLER.

The morning of June 2d found us at Lynchburg, Va., whence we proceeded to Roanoke, at which place, according to our plans, we were to spend the first day of our three months' botanical campaign in the South.

Of course anything strange or of much interest could not be expected from this locality, as the date of our visit corresponded too closely with that of Dr. Britton's party the previous year. However, we found about a dozen species not reported before.

*Jeffersonia diphylla*, then in mature fruit, grew among the bushes on the south bank of the Roanoke river, and some distance below this was *Zizia Bebbii*, together with *Scutellaria nervosa*, and a peculiar, slender form of *Oxalis stricta*. The leaves of this plant are mottled and the peduncles very much recurved. Near by, a small form of *Ranunculus recurvatus* was picked up, also *Heuchera hispida*.

On the rocky banks where the beautiful *Clematis Addisonii* grows we found quite an abundance of *Draba ramosissima*, and some plants of the rare *Arabis lævigata*, var. *Burkii*, which has been reported before only from a few localities in Pennsylvania.

The day became very warm, and later in the afternoon a thunder-storm drove us back to the city. In the evening we returned to Lynchburg. There were many interesting plants along the way, but of these the rapid movement of the train permitted

only fleeting glimpses. Most noticeable was *Senecio aureus*, var. *angustifolius* and a showy *Pentstemon*.

Early the following morning we left for Danville, which is located on the State line of Virginia and North Carolina. Seeing many attractive things from the cars, we decided to leave the train about ten miles above Danville and spend the day in collecting. The weather was wonderfully hot and water scarce in the same degree, only one spring being met with during the day. But some thirty species were collected.

On a wooded bank was *Polygala Senega* in fruit; *Cypripedium pubescens* was still flowering, and *Senecio aureus*, var. *angustifolius*, formed large golden patches everywhere. In a shaded hollow we came across a number of both staminate and pistillate plants of *Chamælirium luteum*, while in the exposed places a robust form of *Pentstemon lævigatus* flourished. On the sandy shore of the Dan River were patches of *Sagina decumbens* and in one place a tangled mass of *Vicia angustifolia*, var. *Bobartii*.

Late in the evening our journey was continued, and Salisbury, N. C., was reached after midnight. Our destination lay about twelve miles from there, but we were compelled to wait until three o'clock the following afternoon for transportation. During the middle of the day, to one not used to it, the heat in that section is almost unendurable, so the time was spent in trying to keep cool.

A hot ride to the village of Gold Hill brought us to the end of the railroad accommodations. From this place a conveyance was to transport our baggage to Heilig's Mill P. O., but it failed to appear. Shouldering our collections and baggage, except the trunks, and going to the village to get our bearings, we were told the interesting news that the proper station had been passed. However, they said it was between two and three miles to Heilig's Mill. The ability of some of the Southern natives to tell what is not true is amazing.

Interesting vegetation lined the way. *Vaccinium arboreum* in flower was scattered all through the pine woods, *Castilleja coccinea* covered the meadows and swamps, and here and there different species of *Cratægus* would appear. *Filago Germanica* and *Marshallia lanceolata*, var. *platyphylla*, were not so common.

In the woods which surrounded our headquarters were several patches of *Clematis ochroleuca*; along the outskirts was *Cratægus spathulata*, and in damp places *Asarum arifolium* pushed up through the fallen leaves. "Pigs" is the very curious local name for this latter plant. In old fields *Barbarea præcox*, robust *Gnaphalium purpureum*, *Pyrrhopappus Carolinianus*, *Allium mutabile* and *Lolium temulentum* abounded. On banks and in open places through the woods, a slender form of *Pentstemon lævigatus*, with dark lead-colored flowers, grew.

A short excursion on June 8th between showers, produced, among other things, a pubescent form of *Zizia cordata*, and the introduced *Bupleurum rotundifolium*. The mistletoe was seen in a number of places, and in every case grew on species of *Hicoria*.

The continual rain made the roads almost impassable, and the drying of specimens slow work. In fact, a number of the best specimens from Virginia had to be thrown away on account of the dampness. Under these circumstances satisfactory work being impossible, a start for the mountains was determined upon, and by eight o'clock on the morning of June 9th we were on our way to the Blue Ridge. The most serious incident that occurred on the way was that of having a satchel stolen, containing many articles which would have been of the greatest use in the mountains.

Lenoir, a town near the foothills of the Blue Ridge, was reached shortly after midnight. The summit of Blowing Rock mountain was the objective point, and early in the morning, after replacing some of our stolen baggage and making all necessary arrangements, we procured a horse and buggy and started on the remaining part of the journey. For eleven miles the road runs between low hills, and crosses the Yadkin river repeatedly. After passing the eleventh mile-post, it reaches the Blue Ridge proper and begins the ascent of Rip Shin mountain, winding around and over many other ridges, with quite a grade for the distance of nine miles.

The mountain part of the road did not seem to agree very well with the horse, so plenty of time was given him, and after a ride of eight hours we reached the top, an altitude of 4,200 feet. The last two or three miles were the most interesting. At

some places there were splendid views of the surrounding country, the whole a vast sea of mountains. Then, too, there was an occasional bush of *Rhododendron calendulaceum* or *R. Catawbiense*, forerunners of what was to come, for, a few hundred yards east of our headquarters was a little forest of the former, one great mass of color, ranging from yellow to scarlet. About a mile west of this spot, near the village of Blowing Rock, which is situated on a plateau many acres in extent, was a great quantity of *R. Catawbiense*, bushes ten feet or more in height, and between the two we almost lost our heads. Both, however, were past their prime, and a week later only the ghost of their former glory remained.

Our hopes at this time concerning the weather were none of the best, but in a day or two the sun came out, and our work was begun in earnest. One of the first things which claimed our attention was a *Pentstemon*. This had been collected in fruit the previous year and its peculiarities noted, but now its dissimilarity to any of our eastern plants was apparent in its large pink-purple, secund flowers. It is rather plentiful on the eastern slopes, especially in damp places. It was not noticed below 3,000 feet elevation, if indeed as low as that.

Along the road near the Blowing Rock hotel is a clump of *Ligustrum vulgare*. It was also noticed sparingly in the John's River valley, though not recorded in Chapman's Flora.

*Asarum Virginicum* was different here from any seen by us in Virginia and the middle country of Carolina. The leaves, instead of being mottled with white, were dark green and more orbicular in outline.

*Menziesia globularis* was so plentiful and the specimens so fine that what seemed to be an everlasting supply was collected.

*Viola hastata* and *V. rotundifolia* were in their accustomed habitats, and some plants of a depauperate form of *V. blanda* grew at one place. *Stellaria pubera* was quite scarce, as was also *Ranunculus recurvatus*.

On the 16th of June we turned our faces toward Grandfather mountain. This was quite a task for our unseasoned limbs, but the summit was reached shortly after midday. A thunder storm to the west of us was making things lively, and we were not al-



together comfortable at the thought of being overtaken by it. But it kindly passed off on the other side.

On the summit, at an elevation of 6,000 feet, were *Clintonia borealis*, *Pyrus nigra*, *Ribes prostratum*, etc. *Leiophyllum buxifolium*, var. *prostratum*, grows in rather inaccessible places on the edges of the cliffs, as well as in crevices in the rocks. The branches are gnarled and twisted, and the main stems of some of the plants an inch or more in diameter near the base.\*

From halfway up until near the summit, growing in and alongside the trail, was plenty of *Cardamine Clematitis*. To the best of our knowledge this plant has been reported before only from Roan mountain. Near the spring, which is a sort of natural water-cooler, except that there is no ice visible, is a swampy place full of *Saxifraga micranthifolia*, and among it were a few plants of *Hydrophyllum Virginicum* with deep violet flowers.† This form was seen at several other places. Further down on the lower slopes were collected the odorous *Allium tricoccum*, *Viola Canadensis*, *Arisæma polymorphum*, and a very small-flowered, long and slender-peduncled form of *Asarum Canadense*.

Instead of staying over night at the hotel at the foot of the mountain, we retraced our steps until darkness overtook us. The worthy people of whom lodging was demanded had eaten their supper, but after some delay the barefooted and rather unprepossessing hostess announced that we could have something to eat. The next morning our progress toward Blowing Rock was decidedly slow, and had not something worth collecting turned up occasionally, it would have been a very tedious tramp. In damp, shady places *Listera convallarioides* hid itself securely in the grass and leaves, and at Shull's Mill on a rocky bank along

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\* The determination of specimens of this plant from different stations has proved somewhat of a problem, owing to the manner of growth. Those from Roan seem to be prostrate, but are not. They are imbedded in the soft turf, and when dug out are found to be erect, often over a foot in height. On Grandfather it grows on exposed rocks and ledges and is more truly prostrate, as is also the case with those on the northern end of Table Rock. But on the southern end it grows erect, covering the rocky ledges in many cases. The characters, as far as have been observed, are the same.

† The same thing has been reported from Western Pennsylvania by Prof. Porter, and from Alaska by Dr. Gray, Syn. Fl. ii. p. I., 155.

the Watauga river, a harvest of *Eatonia Dudleyi* and *Viburnum cassinoides* was reaped, both new to the Southern flora. Here, too, was *Physocarpa opulifolia*, with more slender and pointed leaves than in the North, and also, instead of the bushy *Lonicera glauca*, a weak, slender form creeping over the bushes.

In a field about five miles west of Blowing Rock, and at other places along the road, was an abundance of *Thalictrum purpurascens*, another plant not credited to the country south of Virginia. This field also yielded a good sized bed of *Fragaria Virginiana*, evidently uncultivated, but the fruit large and attractive looking. Many dozens of them were collected, but the receptacles into which they found their way were not portfolios. Not far from this spot a *Thalictrum* was gathered, which, although past flowering at a higher elevation, was still in condition for studying here. It proves to be a new one and has been named by Dr. Britton, *T. dioicum* var. *coriaceum*.\*

After recovering from the fatigue of the first raid, June 22d was set apart for an excursion down the eastern slope of Blowing Rock mountain. It was very interesting to note the difference caused by the elevation in the time of the flowering of species. One after another would appear and then disappear, as if restricted to certain belts. *Chamælorium luteum* thrived at 2,500 feet, and at the same elevation *Pogonia divaricata* grew in the shade by the wayside. Some distance above this was a belt of low bushes of *Castanea pumila*, with remarkably large flowers and white, tomentose leaves. *Symplocos tinctoria*, *Tephrosia Virginiana*, and a strict form of *Andromeda ligustrina*, var. *pubescens*, were everywhere. Still higher on a springy bank along the road *Phacelia bipinnatifida* showed its pretty blue flowers, and gave forth its disagreeable odor.

We soon came into a belt of our new *Pentstemon*. and found it flowering profusely. In places *Oenothera fruticosa*, var. *Pilosella*, with its large yellow flowers lined the road, and on the rocks was an occasional bunch of *Tradescantia pilosa*.

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\* Bull. Torr. Club, vol. xviii. 363. This well marked, new variety of *T. dioicum* was collected at a number of places on the plateau and slopes of Blowing Rock mountain and Stone mountain, and was seen on Table Rock and Roan mountains. It is most closely related to the above-named species, but flowers at least six weeks later, and has an average height of five feet.

On the return trip from Grandfather a wild-looking ravine excited our curiosity, so on June 24th we started out to investigate the locality, which is about five miles west of Blowing Rock. Before going very far a most beautiful sight was presented to us. By the side of the road is a large rock. From its top rises a fine spring, which trickles down the sides. This rock, situated in the shade, is covered with mosses of every shade of green, and the delicate white flowers of *Thalictrum clavatum*, growing among the mosses, made a most pleasing contrast with its green surroundings. The ravine, in appearance, is like a large sloping gutter filled with loose stones and rocks, which, however, are well covered with vegetation. Along the lower edge *Viola Canadensis* and *Asclepias exaltata* pushed their way up between the rocks. Above these, among bushes of *Ribes Cynosbati* and *R. rotundifolium*, were robust plants of *Hydrophyllum Canadense*, bearing its flowers on rather slender peduncles. But, better than all these, in one way, was *Osmorhiza longistylis*, another species new to the flora of the Southern States.

Several friends from the North, who had a desire to come to the mountains and rough it a while, were expected to arrive in Hickory on June 26th. Concluding that a trip to that section of country would yield profitable results, a start on foot for Lenoir was made at seven o'clock on the morning of the 25th. The weather on top of the mountain was delightful, and we anticipated a pleasant walk, only to be disappointed. After leaving the mountains the heat along the treeless, sandy road seemed as if it would surely roast us. This broiling operation, however, was not for naught. The tramp produced another plant new to the South,—*Papaver somniferum*, introduced at one place. Upon the bank of the Yadkin river where it flows out from the foot of Rip Shin mountain, was *Heuchera pubescens* in all stages of development, from bud to fruit, and here also we made our first acquaintance with the two species of shrub most common in that section—*Calycanthus glaucus* and *C. lævigatus*. Lenoir was reached in time to catch the train and at three o'clock it pulled into Hickory. When we had tested the soda-fountains, we sauntered off in the direction of a swamp, which by chance, had been discovered while passing through the town several weeks before.

Just west of the town was an abundance of *Lonicera Japonica*, a plant which has been very much slighted, inasmuch as every manual fails to notice its existence. There is no doubt that it has become naturalized, especially in the South, where it was seen in many localities.

An old gentleman came along and advised us by all means to go to the new cemetery. Perhaps he thought we wanted to depart this life at the end of such a hot day. His advice was followed and it was voted a pretty good place, for in it grew a tall form of *Houstonia purpurea*, which must be placed under the variety *longifolia*, and an exceedingly queer *Cratægus*, which has been referred to *C. parvifolia*.

After a peaceful night's slumber at the New Charter House, the swamp was investigated. This little place at the foot of the Blue Ridge seems to be a handshaking spot for the plants of the North, East, South and West. The first thing that turned up was *Gaylussacia dumosa*. This was somewhat of a surprise and was soon followed by another in the shape of *Scirpus sylvaticus*.\*

*Amianthium angustifolium* was the next surprise, a remarkable extension of its range to the west. *Xanthorrhiza apiifolia* formed large clumps on the border of the swamp, and in dryer situations *Phlox amœna* grew sparingly, together with a few plants of *Pentstemon lævigatus*, var. *canescens*. *Rhododendron viscosum* and *Helenium nudiflorum* were both well represented, but rather old. *Eriocaulon decangulare*, *Calopogon tuberosus* and *Sarracenia flava* were there also, but interesting above all was a most strange *Thalictrum*.\*

The well-marked characters of this plant certainly give it specific rank. It can hardly be placed under *T. polygamum*, (*T. Cornuti*), on account of its diœcious flowers. Specimens from West-

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\*The Southern limit of this species heretofore was White Sulphur Springs, W. Va., where it was collected by Dr. Britton. It has also been collected at a number of localities in Northern and Southern Pennsylvania, although the "Revised Manual" gives its range from Eastern Massachusetts to New York.

†*Thalictrum macrostylum* (Shuttlw.); (*T. Cornuti*, var. *macrostylum*, Shuttlw. in dist. pl. Rugel. 1845-6.) Stem striate,  $\frac{1}{2}$ -1 $\frac{1}{2}$  meters high, much branched above; cauline leaves nearly sessile; leaflets small, entire or slightly 2-3-lobed, pale green above, whitish beneath; flowers diœcious, staminate white, pistillate greenish; achenes numerous (12-24), somewhat grooved; style large.



ern Florida, collected by Chapman are to be placed here. In the Herbarium of the Academy of Natural Sciences at Philadelphia, is a sheet with a staminate plant of this same species, found at Macon, Georgia, by J. M. Green, labeled "*T. Cornuti* var. *brevifolium*, Rugel in Herb. Gray," with a note added by Dr. Gray "probably only *T. purpurascens*," but the characters of the plant debar it from that species.

At one time we thought our last hour had come, and that our bones would be laid to rest in the cemetery back of us. We suddenly came upon an old woman with a temper like the far-famed Xantippe. In her hands she held a very formidable-looking scythe, with which she was hacking away at the grass. She berated us soundly for tramping down her hay, and as long as we were in sight, the least movement towards the precious grass brought forth a fresh tirade.

Some thirty-five miles to the south lay Table Rock mountain and the Hawk's Bill. The sight of these two peaks admonished us continually that we must hasten to them and the surrounding country to see what things of interest might be there, and just after daybreak on the morning of July 1st, a start for Table Rock was made. The first part of the road leads down the southern slope of Blowing Rock mountain for a distance of five miles, thence through the Johns River valley, the latter a very favorite haunt for moonshiners, and on to Globe P. O. Here one has the choice of two routes, one the Johns River road, and the other a trail leading over the mountains to Piedmont Springs. After considering the matter, the route by the trail was chosen, for, although the rougher and more hilly way, there was much more shade, which amounts to a great deal in most valleys of the South.

A fairly good trail led for some miles over several ridges. Then we emerged into the valley of Wilson's creek, and all our faculties, not needed for locomotion, were concentrated on keeping the trail. The almost invincible Aunt Sallie's ridge—the last hard climb of the day—was equal to all the rest of the hills, with their bad qualities put together. From the southern end of Aunt Sallie's ridge, Table Rock was seen about seven miles in front of us. This was the first view we had of the moun-

tain since our departure from Blowing Rock early in the morning. Here was the objective point within seven miles, but required a walk of over fourteen miles to get near the base of the mountain. Traveling became better in some places and at seven o'clock we stood on the porch of Mr. Sisk's house, six miles from the summit. Spending the night here, as all visitors to this peak are in the habit of doing, we made an early start for the ascent.

The eastern slope is remarkably dry and the vegetation was quite uniform up to the base of the peculiar rock-crowned summit. Here and there, in the dry sand, a plant of *Pogonia divaricata* or *Sericocarpus linifolius* would show itself. Pretty high up was a large patch of the widely scattered *Pimpinella integririma* and some dwarf specimens of *Luzula campestris*.

The climbing of the immense rock is naturally the most interesting part of the ascent. *Rhododendron punctatum* thrives on the exposed cliffs, and higher up *Lciophyllum buxifolium* formed a green carpet. A cleft in a large rock contained a weak, slender form of *Arenaria glabra*. Very near the summit, *Scirpus caespitosus* almost covers the rocky surface, and mixed with it is a depauperate but pretty form of *Panicum dichotomum*. The flora of the top of the rock proper seems to be separated into two parts, the one embracing the northern half and the other the southern half. The most conspicuous species on the northern end are *Vaccinium pallidum*, *Robinia hispida* and *Pogonia divaricata*. The vegetation on the southern end is more varied. Here occurs the ever-present *Galax aphylla*, *Lciophyllum buxifolium*, a peculiar, spreading form of *Hypericum prolificum*, *Xerophyllum setifolium*, and the rare *Hudsonia montana*. *Calopogon tuberosus* is common to both ends, while the exposed rocks were decked with a slender, wiry growth of *Selaginella rupestris*.

Early in the afternoon, swarms of a small species of bee covered the summit of the mountain, and it is not necessary to say that they became quite troublesome; some insisted in getting into our hats, a number accompanied us more than half-way down the mountain, and on unpacking one of the bundles of Table Rock plants over two months later, one of the little insects walked out.

*Liquidambar styraciflua* filled the woods at the base of the mountain, along with an occasional tree of *Ilex opaca*.



Steady walking brought us to Piedmont Springs after night came on, and we were received there with more hospitality than at any other place in the mountains.

Next morning the first difficulty to present itself was Aunt Sallie's ridge, but after some effort the top was reached. By a large patch of *Vaccinium vacillans*, a halt was made for the purpose of eating and resting. The rocks produced *Asplenium platyneuron* with incised pinnæ, and in a wild gorge at the northern end of the ridge is an abundant stock of the rare *Carex Fraseri*.

A short distance from this place we again struck the famous Wilson's creek, and made our way along the south bank for some miles. The bright green *Xanthorrhiza apiifolia* covered the ledges of the cliffs. *Boykinia aconitifolia* was discovered on the sandy bank of the creek, and once in a while a plant of *Liparis liliifolia* or *Pogonia verticillata*. While making our way over the rocks, our inspiration was suddenly revived by the delightful odor of *Rhododendron arborescens*, and a few steps brought us before the beautiful tree-like shrub in full bloom. It may be interesting to note here that *Danthonia compressa* was quite common in this valley, although generally it prefers the summits of the higher mountains.

On a tributary of Wilson's creek, one bush of *Pyrularia pubera* sprang from a ledge on the cliff, while along the edge of the water *Calycanthus glaucus* and *C. lævigatus* were perfectly at home. A little further up the stream the ominous sound of a rattlesnake greeted us, but the reptile was left to himself, as the spot was by no means suitable for an encounter. However, the incident led to the rediscovery of an *Asarum* not collected for many years.\*

Our supply of rations for the day was somewhat limited at

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\* *Asarum Virginicum*, L., var. *grandiflorum*, Mx. in DC. Prodr. xv. 426 (1864). *Homotropa macranthum*, Shuttlw. Mss.

This plant, collected by Rugel in 1841 on the Broad river, N. C., seems to have been unnoticed ever since by collectors, and is not given a place in Chapman's Flora. It is undoubtedly a variety, and perhaps, as Shuttleworth thought, a species. It is easily distinguished from *A. Virginicum* by its long peduncle, which averages  $2\frac{1}{2}$  cm. in length, and by its calyx-tube, from three to five times larger, mottled with violet, and large, unequal spreading lobes; also, the anthers are equally four-ribbed.

the start, and it was lessened considerably when one of us discovered that his share had disappeared. Of course he began to get very hungry as soon as the loss was noticed, and there was great lamentation when he pictured how some wandering dog, or, perchance, a bear, would feast on his chicken and biscuits. Finding at length that the outer man was unable to make much headway, it was decided to fill up the inner one at the first suitable place. Pie was demanded, but there was nothing of that description to be had. Cold potatoes and cold corn-bread, the heaviness of which was enough to cause a man with a cast-iron digestive apparatus to turn pale, were set before us. We ate, and, to our astonishment, are still alive.

While passing through the John's river valley, a heavy thunder-storm came over the mountains and, in the excitement, collecting suffered. Only one plant was picked up, but it was an important discovery—*Verbena riparia*.\*

This brings to light another species which Rafinesque collected and named many years ago. The type is preserved in the Columbia College Herbarium, and it seems strange, but it is evident that neither Dr. Gray nor Dr. Engelmann ever saw it, for no reference is made to it in their respective works on the genus. We found it in the mountains on the banks of the John's river and in the low country at the falls of the Yadkin, in both cases true to the name which Rafinesque gave to it.

The only adventure worth recording was the meeting of a brace of wildcats just after nightfall as we were climbing the slopes of Blowing Rock mountain. Upon close inspection they turned out to be a branch with two bunches of leaves on it.

One evening a zealous native appeared who was very anxious to guide us to some of the neighboring places. He got little encouragement, but his pertinacity was prodigious. After he had persecuted us several times we concluded that he might act as guide on a trip to Stone mountain, and do service by carrying the baggage. This mountain is about twelve miles southeast of

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\* *Verbena riparia*, Raf. (1830) *V. hastata*, L., var. *oblongifolia*, Nutt. *Genera*, ii. 40 (1818)? Stem rather tall (average one meter), slightly four-angled, virgately branched above, spikes very slender; leaves pinnatifid, lanceolate to ovate-lanceolate, pubescent, veins very prominent beneath; flowers slightly smaller than in *V. hastata*, light blue; fruit scattered along slender branches.

Blowing Rock, and a stranger would have considerable trouble in finding his way to the summit. The guide lost the trail when the foot of the mountain was reached, in order, perhaps, that he might act as guide at a future time.

On the western side of the mountain, extending almost to the top, is an immense tract of rocks, upon which are very few trees, the vegetation being herbaceous or shrubby. There were detected a few bushes of *Rhododendron punctatum* and an abundance of a tall, woody *Hypericum*, upon which was neither flowers nor fruit. An unusually long-leaved form of *Aletris farinosa* appeared among the trees along the upper edges of the rocks, which were clothed with cushions of *Paronychia argyrocoma*, and adorned with an occasional clump of *Talinum teretifolium*. *Chionanthus Virginica* was there in force, as was *Thalictrum dioicum*, var. *coriaceum*, and a very vigorous form of *Arenaria glabra*, some of the plants being fourteen inches high and very spreading, the tufts often having a diameter of a foot at the top.

A second excursion to Grandfather proved an interesting one. The first noteworthy plant collected was *Carex Fraseri*. A few hundred feet from the base, the trail leads through a grove of *Prunus Pennsylvanica*, and higher up in damp, mossy places *Oxalis Acetosella* forms vast patches. At this time of the year the higher parts of this grand old mountain are the most productive. Near the ice-cold spring, whose elevation is about 5,000 feet, is a vigorous growth of *Glyceria elongata*, a rare grass in the South. On the ledges of cliffs occur *Carex canescens*, var. *alpicola*, and a coarse form of *Saxifraga leucanthemifolia*. Along the trail above the spring *Vaccinium erythrocarpon* begins to appear, as well as *Pyrus Americana*. From the elevation of 5,000 feet to the summit a peculiarly smooth *Rubus villosus* \* has its home.

*Carex debilis* puts in an appearance at the first summit. Fine specimens of *Abies Fraseri* and *Picea Mariana* were obtained here. The history of the terrific storms that pass over Grandfather's head during the winter is written in the last named

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\* This plant growing in dense clusters from the elevation of 5,000 feet to the summit, is destitute of prickles except an occasional poorly developed one on the young shoots. It was also collected on Roan mountain at the same elevation.

trees, for all the branches that face the northwest are either worn off or dead. The top of the mountain was free from clouds during the early part of the afternoon, and a magnificent view of the vast surrounding sea of mountains and peaks was presented to us. Many miles to the west lay the Great Smoky range; most prominent in it was the Roan, and plans were at once made to visit that mountain the following week.

During the intervals between trips to distant points many minor excursions were made nearer headquarters. Some rare and many common species were gathered for the sake of locality. Traveling over a trail through the woods a number of times a hemlock with unusually large leaves and cones was noticed; afterwards the same thing was seen in other places. Branches were secured and the tree proved to be *Tsuga Caroliniana*. It is scattered over the plateau and grows in company with *T. Canadensis*, but was not observed below 4,000 feet elevation. *T. Caroliniana* is a beautiful tree and in some respects more handsome than its northern sister.

On the 13th of July our headquarters were filled almost to overflowing by the arrival of a party of friends from Salisbury, among whom were six young ladies. To say that we had an enjoyable time—as far as it was in the power of two hard-working collectors—is a very temperate expression.

Roan mountain, which was reached on the evening of the 15th, yielded little that has not heretofore been recorded. But it was a paying trip nevertheless, for on the rocks not far from Lyon's bluff we came upon *Arenaria Grænlandica*, a remarkably southern extension of this alpine plant of the North, and of course an addition to the Southern flora. Near it were several plants of *Ranunculus septentrionalis*, with the flowers much reduced in size. *Potentilla tridentata* as far as we noticed grew on the open ground and not on rocks. Upon the precipitous cliffs of Lyon's Bluff, *Sedum roseum* and *Scirpus cæspitosus* were plentiful.

Only two plants of *Lilium Grayi* were noticed, but they were within an enclosure, upon which was a notice warning persons not to disturb the things within. Information came too late that it was blooming in a meadow beyond Linville and also between Blowing Rock and Boone. Handsome, but dwarfed plants of



*Habenaria fimbriata* grew on the upper slopes and the grassy summit.

The color yellow was well represented in the flowers of *Senecio aureus*, var. *Balsamitæ*, the rare *Geum radiatum* and *Hypericum graveolens*. Some distance down the western slope grew *Carex Pennsylvanica* and a very slender form of *C. æstivalis*. Many fine and beautiful trees of *Acer saccharum* stand near the base of the mountain, with an occasional *Tilia heterophylla*, while *Aster ericoides*, var. *villosus*, is rare.

The night of the 16th was spent at Roan Mountain Station, where we arrived after the supper hour and had to be content with an improvised meal. A short investigation of the banks of the Doe river, the next morning, added to our list *Verbena officinalis*, and some small and not very well developed *Veronica Anagallis*, which is new to the Southern States.

Then the train on the go-as-you-please narrow gauge railroad was taken for Cranberry. This road is a marvel of slowness, as its passenger train sometimes travels the distance of nine miles in seventy minutes.

The tramp of twelve miles from Cranberry to Linville was rather tiresome on account of the baggage, but the surroundings were inspiring. The greater part of the road lies over a mountain plateau, which is one of the extensions of the Smoky range. In a wet place, somewhat more than a mile from Cranberry, we discovered plenty of *Veronica Anagallis*, some of the plants being almost three feet tall. Several miles east of this place a dry bank yielded very fine *Phlox glaberrima* and *Anychia Canadensis*.

*Pyrola rotundifolia* adorned the mossy places in the woods, also an occasional fruiting *Cypripedium pubescens*. *Pyrola elliptica* was sought for, but in vain. This species has not yet been reported from the South.

About half way between Cranberry and Linville is a swamp, which ought to have more attention paid to it. Our attention was mainly directed to getting a good supply of *Hypericum densiflorum* which, in some places grows in dense masses. Near the north fork of the Doe river, we obtained the pubescent form of *Zizia cordata*, like that secured before in the middle country of the State.

Black clouds now gathered around the mountain tops and spread over the whole plateau, and in a short time a light rain began to fall. All possible haste was made for Linville and the shelter of the inn reached about dark, just in time to escape a deluge from above.

A steady, pouring rain continued through the night and following day, so collecting was out of the question.

After breakfast, with the plunder of the raid, amounting to eleven hundred and fifty specimens, we took the stage for our headquarters beyond Blowing Rock. Of course it was necessary to keep inside the stage-coach, but traveling in this way soon became monotonous. Having lost considerable sleep on the trip, we were naturally inclined to drowsiness, but woe to the person who attempts sleeping in a regulation-coach on a new mountain-road during a heavy rain.

This was the beginning of the rainy season, which sets in about this time each year. It interfered much with our plans, but we managed to circumvent the showers and make a number of successful excursions. However, our scheme for a jaunt to the southwestern corner of Virginia, White Top mountain and vicinity, was completely spoiled. These places would, no doubt, have yielded good results, and we hope to explore them sometime in the near future.

July 25th was devoted to exploring portions of the new road between Blowing Rock and Linville. This road, which for three-fourths of its length winds along over the foot hills and slopes of Grandfather mountain, finally crossing it near Linville, presents some very beautiful scenery.

The objective point was about fourteen miles from Blowing Rock, where the road passes through two or three promising spots. On tracts, many acres in extent, not a tree is to be seen. Immense loose rocks lie scattered about, and on the largest tract is a ledge extending to the summit of the mountain, almost 2,000 feet above.

The principal growth is *Vaccinium pallidum*, but on the more level portions there was an abundance of *Zygadenus leimanthoides*, a low and generally solitary-flowered form of *Lilium superbum*, *Xerophyllum scitifolium*, now past flowering, but attain-



ing a height of five feet, an occasional glimpse of the beautiful pink *Calopogon tuberosus*, and sometimes, too, of the no less charming blossoms of *Robinia hispida*, although these latter were few and far between.

The handsomest specimens of *Asplenium montanum* that we had ever seen were found there in a crevice of a large rock. A swift-winged bird of some kind darted out of the opening with a loud whirr, and the undignified way in which two individuals left that rock would have amused a spectator exceedingly.

On the return trip, a halt was made at one of the few clearings through which the road passes. Here *Lilium superbum* was scattered among the grass in great bunches of color, some of the stalks having upon them six or eight open flowers. The introduced *Spergula arvensis* was found by the wayside, and on a hill occurred *Hypericum graveolens*.\*

On the borders of a thicket *Clematis Viorna* adorned the bushes, but the most important find of the day was a new variety of *Smilax rotundifolia*.†

During the rainy season, one afternoon an attempt was made to go to the woods to collect mosses. But before going very far, a heavy thunder-storm came up over the eastern side of the mountain and drove us back to headquarters. Only one plant was picked up on a small hill near the head-spring of the New River, and a rare find it was: *Senecio Millefolium*, var. *Memmingeri*.‡

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\*Hitherto, in the descriptions of this species, the stem has been described as "nearly simple." This may hold in plants from high elevations, as on Roan 6,300 feet; but specimens both from Blowing Rock and Grandfather mountains, elevation about 4,000 feet, are branched more than half way down the stem. The branches are densely flowered and the flowers only about half the size of those from higher elevations.

†*Smilax rotundifolia*, L. var. *CRENULTA*, n. var. Stem armed with but few prickles. Leaves lanceolate to ovate-lanceolate, erosely-crenulate, never cordate at base, the smaller ones inclined to taper, prominently three-nerved, 3-7 cm. long, 1-4 cm. wide; pedicels 2-3 mm. long, only half the length of the peduncles; berries smaller and fewer in number than in the species.

Collected in deep woods, on the southern slope of Grandfather mountain, elevation about 4,000 feet. To this variety are to be referred specimens collected on Stone mountain and in the Richland valley, although the leaves are slightly broader and less glossy.

‡*Senecio Millefolium*, T. and G., var. *Memmingeri*, Britt. The type of this variety was collected in 1887, by Mr. E. R. Memminger, in Henderson County.

It was discovered one day that Rocky Knob, a spur some five hundred feet below the plateau of Blowing Rock, is a place not to be despised. Here *Pinus pungens* puts in an appearance, and among it grows an unusual form of *P. rigida*. The tree is medium-sized, like many others of the same species, but the cone instead of having the usual flat base, is rounded, short and slender, of a beautiful brown tint, and looks as if it were varnished.

In the sandy woods *Sericocarpus asteroides* and *Gerardia lævigata* were mingled with lusty looking bushes of *Vaccinium vacillans*, and on the rocks a few clumps of *Talinum teretifolium*, a solitary bush of *Hypericum prolificum*, and a small-leaved form of *Gaylussacia resinosa*.

Another visit to Stone mountain on July 31st yielded about the same results as the former trip. But in the Richland valley, near the foot of the mountain, several good things were picked up.

Near the ruins of an old house were great clumps of *Symphoricarpos vulgaris*, full of flowers and correspondingly full of bees. On the damp, moss-grown banks of the Little Branch, *Carex Fraseri* was secured again, this being the third station noticed. In shady situations *Leucothoe Catesbæi*, and on more elevated sandy ground, one or two bushes of *Ilex montana*, var. *mollis* occurred.

On the eastern slope of Blowing Rock mountain beautiful specimens of *Polygala Curtissii* began to appear at an elevation of 3,000 feet. Here also was *Pycnanthemum Tullia*, and a little further down on dry, sandy ground *Nyssa aquatica*, and plenty of an *Alnus* which unfortunately was not collected.

On August 6th, in company with Prof. W. P. Wilson, of the University of Pennsylvania, was made the last trip to Grandfather mountain. The only noteworthy plant not collected before was *Rhododendron Vaseyi* in fruit, growing on the summit of the mountain, and *Solidago glomerata*, which was just coming into bloom. Beginning at an elevation of about 5000 feet, where *Aconitum reclinatum* has its home, and extending almost to the very summit, was a wealth of the beautiful pink-purple *Chelone Lyoni*, and at intervals a clump of *Monarda didyma*. Near the summit *Polypodium vulgare* was found sparingly growing on trees.

Our last collecting in the mountains was done on the 8th of August, when the ledges of "Blowing Rock" itself were investigated. Vegetation here seemed to be very backward. *Sedum telephioides* was hard to find in flower, nearly all of it being still in bud, and *Paronychia argyrocoma* was not much better. The plants of *Polypodium incanum* found were small, but with well developed *sori*. The purple-flowered form of *Allium cernuum* hung its nodding heads over the ledges. This plant has a strange look, not only on account of its purple color, but the perianth in the living plant is contracted at both top and bottom.

The chief object, however, was not found. *Liatris Helleri*, collected here on August 18, 1890, was not yet in bloom, but a quantity of *L. graminifolia* was obtained. The latter plant is quite plentiful on the ledges, and presents a beautiful sight when in flower. Many of the ledges are only a few inches wide, and are not by any means safe places on which to ramble about, as the base of the cliff is more than one hundred feet below. One of us has cause to remember the place, for on that day his earthly career was almost ended. While carefully picking his way along one of the narrow ledges, seeking for "onions," his foot slipped, and over he went, turning somersaults, and desperately clutching at anything that offered support. A narrow shelf and a friendly bush finally stopped his descent, after he had fallen about fifteen feet. Two badly damaged fingers and several minor bruises were, fortunately, the only results.

A grand exodus was planned for the 11th. The few previous days were devoted to securing lumber, making boxes and packing the accumulations of over two months' labor. Early in the morning two baggage wagons were loaded with trunks and boxes and started for Lenoir. Later, three large hacks appeared, which were to take our party down the mountain. The ride proved a delightful one and Lenoir was reached in time to partake of the dinner which had been telegraphed for. Seven o'clock saw us in Salisbury.

The next day we were entertained at the very pleasant home of Mr. D. A. Atwell, together with other friends, who had been with us in the mountains. Our party now separated, and in the evening we were stationed in our new headquarters, the hospita-

ble home of the Rev. C. B. Heller, near Heilig's Mill, for a week or ten days' exploration in the middle country of North Carolina.

A great part of this region is covered with a growth of *Pinus echinata*. These woods do not contain much of special interest, for some years ago they were cultivated fields; but eight miles to the east are the pine-barrens, which are natural gardens.

*Tecoma radicans* decorated the trees and shrubs with its large red flowers and spindle-shaped fruit. *Lespedeza striata* clothed the waysides, and *Desmodium canescens* and the tall wand-like *Paspalum Floridanum* were everywhere. On the borders of the meadow stood trees of *Nyssa biflora*. Within were many rare and beautiful plants. The bright golden *Silphium Asteriscus* appeared first, then a large and showy lot of *Liatris spicata*. *Vaccinium virgatum*, var. *tenellum*, grew in the tall grass and not far away was a bed of the very rare *Aster ptarmicoides*, var. *Georgianus*, which, according to the Synoptical Flora, has been found heretofore only in Northern Georgia and Northwestern Arkansas.

The stems of *Physostegia Virginiana*, var. *speciosa*, attained a length of five feet. In dryer places *Hypericum virgatum* grew in company with the bright *Centrosema Virginiana*. Large trees of *Fraxinus pubescens* and *F. viridis* were noticed at different points and at one locality a limited supply of *Commelina hirtella*.

A small swamp in the woods was overgrown with the graceful *Juncus setaceus* and *Cyperus flavescens*, with an occasional clump of *Kyllingia pumila*.

It was unanimously decided to celebrate the last raid of the season by an excursion to the Falls of the Yadkin, and the start was made before daybreak on the morning of August 18th. The falls are situated between twenty-five and thirty miles southeast of Heilig's Mill, and not, by any means, easy to find for one not used to North Carolina roads.

At daybreak, about a mile west of Gold Hill, a new station for *Lotus Helleri* was discovered, while several miles east of the same village *Solidago serotina*, var. *gigantea*, abounded, and was remarkable for its slender and graceful habit. Now the road entered the pine-barrens, and in a small swamp, growing in a tangled mass, were *Lobelia Nuttallii*, *L. puberula*, *Habenaria ciliaris*, *Rhexia Mariana*, and a peculiar, wand-like *Solidago*. This latter plant is



new and has been named by Prof. Porter, *S. Boottii*, var. *Yadkinensis*, after the river near which we found it.

Late in the afternoon, the falls were reached. The river at this point breaks through some low hills. The banks are very rocky and in some places rise to quite formidable cliffs. It is an extraordinary locality and a number of days could be profitably spent in exploring it. Only one hour was at our command and this was not without good results.

The most remarkable find was that of *Acer saccharum*, var. *Floridanum*. This extends its range about five hundred miles to the north. A beautiful, slender form of *Fraxinus Americana* had its home on the shore of the river, and might merit varietal rank. In company with it was *Rhododendron calendulaceum*. *Gelsemium sempervirens*, and *Bignonia capreolata* twined over the shrubs. On the rocks *Tipularia unifolia* was in bloom. The cliffs produced *Asplenium parvulum* and *Polypodium incanum*. Here *Polypodium* covers the trunks of trees as well as the rocks. Upon the hot sandy shore *Quercus aquatica* and *Ulmus alata* were prevalent. On top of the bluff *Lotus Helleri*, various forms of *Cratægus parvifolia* and *C. flava*, *Vitis rotundifolia* and *Solidago rugosa* were collected. A meadow furnished finely developed specimens of our new *Solidago* and rank plants of *Polygala Curtissii*.

It cannot be recorded here, how many times we lost the way, how the horse gave out and walking had to be resorted to, the accident that happened to the rations, and other mishaps. But, well pleased with the returns of the jaunt, we reached Heilig's Mill long after midnight.

A season of rain came on now, and a start for home was made when our specimens were sufficiently dried. One more species was collected while passing through Salisbury—*Euphorbia marginata*. It is introduced into waste places and was our last addition to the flora of the Southern States.

#### LIST OF PLANTS COLLECTED.\*

*Clematis Addisonii*, Britton. Roanoke, Va.

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\* All the plants here enumerated were collected in North Carolina, unless otherwise stated. Those marked † are new to the Southern States, as limited by Chapman's Flora.

- Clematis ochroleuca*, Ait. Heilig's Mill.  
*Clematis Viorna*, L. Blowing Rock, Grandfather mountain, Lenoir, Falls of the Yadkin.  
*Thalictrum clavatum*, DC. Blowing Rock, Grandfather mountain, Roan mountain, Stone mountain.  
*Thalictrum macrostylum* (Shuttlw.), Small. & Heller. Hickory.  
*Thalictrum dioicum*, L. Blowing Rock.  
*Thalictrum dioicum*, L., var. *coriaceum*, Britt. Blowing Rock, Stone mountain, Table Rock.  
† *Thalictrum purpurascens*, L. Blowing Rock.  
*Anemone Virginiana*, L. Blowing Rock.  
*Trautvetteria Carolinensis* (Walt.), Vail. Blowing Rock, Roan mountain.  
*Ranunculus recurvatus*, Poir. Roanoke, Va., Blowing Rock.  
*Ranunculus septentrionalis*, Poir. Roan mountain.  
*Aconitum reclinatum*, A. Gray. Grandfather mountain.  
*Actæa alba* (L.), Mill. Grandfather mountain.  
*Xanthorrhiza apiifolia*, L'Her. Hickory.  
*Calycanthus glaucus*, Willd. Lenoir, Wilson's creek.  
*Calycanthus lævigatus*, Willd. Lenoir, Wilson's creek.  
*Menispermum Canadense*, L. Roanoke, Va.  
*Caulophyllum thalictroides* (L.), Mx. Grandfather mountain.  
*Diphylleia cymosa*, Mx. Blowing Rock, Roan mountain, Tenn.  
*Jeffersonia diphylla*, (L.) Pers. Roanoke, Va.  
*Sarracenia flava*, L. Hickory.  
† *Papaver somniferum*, L. Lenoir.  
*Corydalis sempervirens* (L.), Pers. Blowing Rock.  
*Barbarea præcox* (Smith), R. Br. Heilig's Mill.  
*Arabis Canadensis*, L. Blowing Rock.  
*Arabis lævigata*, Poir. Blowing Rock.  
*Arabis lævigata*, Poir., var. *Burkii*, Porter. Roanoke, Va.  
*Cardamine Clematitis*, Shuttlw. Grandfather mountain.  
*Draba ramosissima*, Desv. Roanoke, Va.  
*Brassica campestris*, L. Blowing Rock.  
*Lepidium Virginicum*, L. Blowing Rock.  
*Cleome spinosa*, L. Near Bilesville.  
*Hudsonia montana*, Nutt. Table Rock.  
*Lechea racemulosa*, Michx. Rocky Knob, Stone mountain.



- Viola blanda*, Willd. Blowing Rock, Grandfather mountain.  
*Viola Canadensis*, L. Blowing Rock, Grandfather mountain.  
*Viola hastata*, Michx. Blowing Rock, Watauga river.  
*Viola obliqua*, Hill. Blowing Rock.  
*Viola palmata*, L. Blowing Rock, Hickory.  
*Viola primulæfolia*, L. Hickory.  
*Viola rotundifolia*, Michx. Blowing Rock.  
*Viola sagittata*, Ait. Blowing Rock.  
*Viola striata*, Ait. Watauga river near Grandfather.  
*Polygala Curtissii*, Gray. Gold Hill, east slopes of Blowing Rock.  
*Polygala incarnata*, L. Hickory, Faith P. O.  
*Polygala Senega*, L. Fall creek, Va.  
*Polygala verticillata*, L. Heilig's Mill.  
*Silene antirrhina*, L. Green Hill (Blowing Rock).  
*Silene stellata* (L.), Ait. f. Blowing Rock.  
*Silene Virginica*, L. Blowing Rock.  
*Stellaria pubera*, Michx. Blowing Rock.  
*Arenaria glabra*, Michx. Stone mountain, Table Rock.  
† *Arenaria Grænlandica* (Retz.), Spreng. Roan mountain.  
† *Sagina decumbens* (Ell.), T. & G. Heilig's Mill, Roanoke, Va.  
*Spergula arvensis*, L. Grandfather mountain (Southern slopes).  
*Talinum teretifolium*, Pursh. Rocky Knob. Stone mountain.  
*Ascyrum hypericoides*, L. Falls of Yadkin, Heilig's Mill, Faith P. O.  
*Ascyrum stans*, Michx. Faith P. O.  
*Hypericum densiflorum*, Pursh. Near Cranberry.  
*Hypericum gentianoides* (L.), B.S.P. Heilig's Mill.  
*Hypericum graveolens*, Buckley. Blowing Rock, Roan mountain, Grandfather mountain.  
*Hypericum maculatum*, Walt. Heilig's Mill.  
*Hypericum perforatum*, L. Blowing Rock.  
*Hypericum prolificum*, L. Rocky Knob.  
*Hypericum virgatum*, Lam. Faith P. O.  
*Hibiscus Moscheutos*, L. Falls of the Yadkin.  
*Tilia heterophylla*, Vent. Roan Station, Tenn.  
*Oxalis Acetosella*, L. Grandfather mountain, Roan mountain.  
*Oxalis recurva*, Ell. Roanoke, Va.

*Oxalis stricta*, L. Roanoke, Va., Heilig's Mill, Blowing Rock, Lenoir.

*Ilex montana*, T. & G. Blowing Rock.

*Ilex montana*, T. & G., var. *mollis* (Gray), Britt. Richland

*Evonymus Americanus*, L. Roanoke, Fall creek, Va., Lenoir.

*Evonymus atropurpureus*, Jacq. Roanoke, Va.

*Vitis æstivalis*, Michx. Heilig's Mill, Shull's Mill.

*Vitis cordifolia*, Lam. Roanoke, Va.

*Vitis rotundifolia*, Michx. Falls of Yadkin.

*Acer Pennsylvanicum*, L. Grandfather mountain.

*Acer saccharum*, Marsh. Roan mountain, Tenn.

*Acer saccharum*, Marsh., var. *FLORIDANUM* (Chap.) = *A. saccharinum*, var. *Floridanum*, Chapm. Falls of Yadkin.

*Acer spicatum*, Lam. Roan mountain, Tenn., Grandfather mountain.

*Rhus aromatica*, Ait. Falls of Yadkin.

*Rhus copallina*, L. Stone mountain, Faith P. O.

*Thermopsis fraxinifolia*, Curtis. Aunt Sallie's ridge.

*Crotalaria sagittalis*, L. Heilig's Mill.

*Lotus Helleri*, Britt. Heilig's Mill, Gold Hill, Falls of Yadkin.

*Psoralea melilotoides*, Mx. Hickory.

*Amorpha fruticosa*, L. Falls of Yadkin.

*Tephrosia spicata*, T. & G. Hickory.

*Tephrosia Virginiana* (L.), Pers. Fall creek, Va., Blowing Rock.

*Robinia hispida*, L. Grandfather mountain, Table Rock.

*Robinia Pseudacacia*, L. Near Grandfather mountain.

*Stylosanthes biflora* (L.), B.S.P. Faith P. O.

*Desmodium canescens* (L.), DC. Heilig's Mill.

*Desmodium Marylandicum* (L.), Boott. Faith P. O.

*Lespedeza repens* (L.), Bart. Heilig's Mill.

*Lespedeza reticulata* (Muhl.), Pers. Heilig's Mill.

*Lespedeza striata* (Thunb.), Hook. and Arn. Heilig's Mill.

*Lespedeza Stuvei*, Nutt. Heilig's Mill.

*Vicia angustifolia*, Roth., var. *Bobarti* (Forster), Koch. Danville, Va.

*Vicia Caroliniana*, Walt. Fall creek, Va., Blowing Rock.

*Lathyrus venosus*, Muhl. Blowing Rock.

- Centrosema Virginianum* (L.), Benth. Heilig's Mill.  
*Clitoria Mariana*, L. Hickory.  
*Phaseolus umbellatus* (Muhl.), Britt. Heilig's Mill.  
*Rhynchosia erecta* (Walt.), DC. Falls of Yadkin.  
*Gleditschia triacanthos*, L. Fall creek, Va.  
*Cassia Chamæcrista*, L. Heilig's Mill.  
*Cassia Marylandica*, L. Heilig's Mill.  
*Cercis Canadensis*, L. Heilig's Mill.  
*Schrankia angustata*, T. and G. Hickory.  
*Prunus Americana*, Marsh. Roan Station, Tenn.  
*Prunus angustifolia*, Marsh. Fall creek, Va.  
*Prunus Pennsylvanica*, L. f. Grandfather mountain.  
*Spiræa Aruncus*, L. Fall creek, Va., Blowing Rock, Shull's Mill.  
*Physocarpa opulifolia* (L.), Raf. Shull's Mill, Stone mountain.  
*Rubus hispidus*, L. Near Cranberry.  
*Rubus villosus*, Ait. Grandfather mountain.  
*Geum Canadense*, Jacq. Blowing Rock.  
*Geum radiatum*, Michx. Roan mountain.  
*Fragaria Virginiana*, Mill. Blowing Rock.  
*Potentilla tridentata*, Soland. Blowing Rock, Roan mountain.  
*Agrimonia striata*, Michx. Blowing Rock.  
*Agrimonia microcarpa*, Wallr. Heilig's Mill, Richland valley.  
*Agrimonia parviflora*, Ait. Heilig's Mill.  
*Rosa rubiginosa*, L. Near Grandfather mountain.  
*Pyrus Americana* (Marsh.), DC. Grandfather mountain, Roan mountain.  
*Pyrus arbutifolia* (L.), L. f. Blowing Rock, Faith P. O.  
*Pyrus nigra* (Marsh.), Sargent. Grandfather mountain.  
*Cratægus flava*, Ait. Faith P. O., Falls of the Yadkin.  
*Cratægus parvifolia*, Ait. Hickory, Falls of the Yadkin.  
*Cratægus spathulata*, Michx. Heilig's Mill.  
*Amelanchier Canadensis* (L.), Medik. Blowing Rock, near Grandfather mountain.  
*Astilbe decandra*, D. Don. Stone mountain.  
*Saxifraga leucanthemifolia*, Michx. Blowing Rock, Grandfather mountain, Roan mountain.  
*Saxifraga micranthifolia* (Haw.), B.S.P. Grandfather mountain and near Shull's Mill.

- Boykinia aconitifolia*, Nutt. Wilson's creek.  
*Tiarella cordifolia*, L. Grandfather mountain.  
*Heuchera Americana*, L. Fall creek, Va.  
*Heuchera hispida*, Pursh. Roanoke, Va.  
*Heuchera pubescens*, Pursh. Hickory, Rip Shin mountain, Rocky Knob.  
*Heuchera villosa*, Michx. Blowing Rock, Grandfather mountain, Roan mountain.  
*Hydrangea arborescens*, L. Blowing Rock.  
*Itea Virginica*, L. Hickory.  
*Ribes Cynosbati*, L. Blowing Rock, Grandfather mountain, Roan mountain (Tenn.)  
*Ribes prostratum*, L'Her. Grandfather mountain.  
*Ribes rotundifolium*, Michx. Grandfather mountain.  
*Scdum Nevii*, A. Gray. Roanoke, Va.  
*Sedum roseum* (L.), Scop. Roan mountain.  
*Sedum telephioides*, Michx. Blowing Rock.  
*Liquidambar Styraciflua*, L. Near Table Rock.  
*Rhexia Mariana*, L. Faith P. O.  
*Oenothera glauca*, Michx. Blowing Rock.  
*Oenothera fruticosa*, L., var. *PILOSELLA*, (Raf.), (*O. Pilosella*, Raf.) Blowing Rock.  
*Oenothera fruticosa*, L., var. *linearis*, (Michx.), S. Watson. Fall creek, Va.  
*Oenothera sinuata*, L. Fall creek, Va., Heilig's Mill.  
*Circæa alpina*, L. Blowing Rock, Grandfather mountain, Roan mountain.  
*Passiflora incarnata*, L. Hickory, Lenoir.  
*Eryngium aquaticum*, L. Hickory, Faith P. O.  
*Sanicula Canadensis*, L. Richland valley, Blowing Rock.  
*Sanicula Marylandica*, L. Blowing Rock, Falls of the Yadkin.  
*Bupleurum rotundifolium*, L. Heilig's Mill.  
*Cicuta maculata*, L. Faith P. O.  
*Cryptotænia Canadensis*, (L.), DC. Blowing Rock.  
*Pimpinella integerrima* (L.), Benth. and Hook. Table Rock.  
*Osmorhiza Claytoni* (Michx.), B.S.P. Roanoke, Va., Banks of Watauga.

- † *Osmorhiza longistylis* (Torr.), DC. Blowing Rock.  
*Discopleura capillacea*, Michx. Heilig's Mill.  
*Ligusticum actæifolium*, Michx. Table Rock, Blowing Rock.  
*Thaspium aureum*, Nutt. var. *atropurpureum* (Desr.), Coult. and Rose. Fall creek, Va.  
*Thaspium barbinode* (Michx.), Nutt. Blowing Rock, Roan mountain.  
*Zizia Bebbii*, (Coult. and Rose), Britt. Roanoke, Va., Blowing Rock, Roan Mountain, Stone mountain.  
*Daucus Carota*, L. Heilig's Mill.  
*Cornus sericea*, L. Heilig's Mill.  
*Nyssa aquatica*, L. Blowing Rock.  
*Nyssa biflora*, Walt. Faith P. O.  
*Sambucus Canadensis*, L. Blowing Rock.  
*Sambucus racemosa*, L. Grandfather mountain.  
† *Viburnum cassinoides*, L. Shull's Mill.  
*Viburnum lantanoides*, Michx. Grandfather mountain.  
*Symphoricarpos vulgaris*, Michx. Richland valley.  
*Lonicera glauca*, Hill. Shull's Mill.  
† *Lonicera Japonica*, Thunb. Hickory.  
*Lonicera sempervirens*, L. Fall creek, Va.  
*Mitchella repens*, L. Grandfather mountain.  
*Diodia Virginiana*, L. Heilig's Mill, Hickory.  
*Galium latifolium*, Michx. Blowing Rock. Cranberry.  
*Galium trifidum*, L. Blowing Rock.  
*Vernonia noveboracensis* (L.), Willd. Faith P. O.  
*Elephantopus tomentosus*, L. Heilig's Mill.  
*Eupatorium album*, L. Falls of the Yadkin.  
*Eupatorium hyssopifolium*, L. Heilig's Mill.  
*Liatris graminifolia*, Pursh. Blowing Rock.  
*Liatris spicata* (L.), Willd. Faith P. O.  
*Chrysopsis graminifolia*, Nutt. Near the Yadkin.  
*Solidago Boottii*, Hook., var. *Yadkinensis*, Porter, n. var., ined.  
Near the Falls of the Yadkin, and four miles east of Gold Hill.  
*Solidago Canadensis*, L. Heilig's Mill.  
*Solidago odora*, Ait. Near the Yadkin.  
*Solidago rugosa*, Mill. var. Near the Falls of the Yadkin.



- Sericocarpus asteroides* (L.), B.S.P. Rocky Knob.  
*Sericocarpus linifolius* (L.), B.S.P. Hickory, Table Rock.  
*Aster ericoides*, L., var. *villosus*, T. and G. Roan mountain, Tenn.  
*Aster ptarmicoides*, T. and G., var. *Georgianus*, A. Gray. Faith P. O.  
*Aster surculosus*, Michx. Near the Yadkin.  
*Erigeron annuus* (L.), Pers. Blowing Rock.  
*Erigeron bellidifolius*, Muhl. var. Shull's Mill, Blowing Rock.  
*Erigeron ramosus* (Walt.), B.S.P. Blowing Rock.  
*Filago Germanica*, L. Gold Hill.  
*Silphium Asteriscus*, L. Faith P. O.  
*Chrysogonum Virginianum*, L. Fall creek, Va., Heilig's Mill.  
*Parthenium integrifolium*, L. Hickory.  
*Heliopsis helianthoides* (L.), B.S.P. Blowing Rock, near Grandfather Hotel.  
*Rudbeckia fulgida*, Ait. Faith P. O., Bilesville.  
*Rudbeckia hirta*, L. Blowing Rock, Hickory.  
*Rudbeckia laciniata*, L. Grandfather mountain.  
*Coreopsis auriculata*, L. Fall creek, Va.  
*Coreopsis senifolia*, Michx., var. *stellata* (Nutt.), T. & G. Blowing Rock, Grandfather mountain, Stone mountain.  
*Coreopsis verticillata*, L. Falls of the Yadkin.  
*Marshallia lanceolata*, Pursh., var. *platyphylla*, M. A. Curtis. Gold Hill.  
*Helenium nudiflorum*, Nutt. Hickory.  
*Chrysanthemum Leucanthemum*, L. Blowing Rock.  
*Arnica acaulis* (Walt.), B.S.P. Hickory.  
*Senecio aureus*, L. Shull's Mill.  
*Senecio aureus*, L., var. *Balsamitae* (Muhl.), T. & G. Roan mountain.  
*Senecio aureus*, L., *angustifolius*, Britt. Fall creek, Va., Heilig's Mill. Blowing Rock mountain.  
*Senecio Millefolium*, T. & G., var. *Memmingeri*, Britt., n. var., ined. Blowing Rock.  
*Cacalia atriplicifolia*, L. Blowing Rock.  
*Cacalia reniformis*, Muhl. Grandfather mountain.  
*Hieracium Gronovii*, L. Faith P. O.

- Hieracium venosum*, L. Blowing Rock.  
*Pyrrhopappus Carolinianus* (Walt.), DC. Heilig's Mill.  
*Sonchus asper*, Vill. Faith P. O.  
*Lobelia cardinalis*, L. Heilig's Mill.  
*Lobelia leptostachys*, A. DC. Richland Valley.  
*Lobelia Nuttallii*, R. & S. East of Gold Hill.  
*Lobelia puberula*, Michx. Heilig's Mill and Falls of the Yadkin.  
*Lobelia spicata*, Lam. Fall creek, Va.  
*Campanula divaricata*, Michx. Blowing Rock.  
*Specularia perfoliata* (L.), A. DC. Blowing Rock.  
*Gaylussacia dumosa* (Andr.), T. & G. Hickory, Falls of the Yadkin.  
*Gaylussacia resinosa* (Ait.), T. & G. Blowing Rock.  
*Vaccinium arboreum*, Marsh. Falls of the Yadkin.  
*Vaccinium erythrocarpon*, Mx. Grandfather mountain.  
*Vaccinium pallidum*, Ait. Grandfather mountain, Blowing Rock, Table Rock.  
*Vaccinium vacillans*, Soland. Blowing Rock.  
*Vaccinium virgatum*, Ait., var. *tenellum* (Ait.), A. Gray. Faith P. O.  
*Gaultheria procumbens*, L. Blowing Rock, Grandfather mountain.  
*Leucothoë Catesbæi* (Walt.), A. Gray. Richland Valley.  
*Leucothoë recurva* (Buckley), A. Gray. Blowing Rock.  
*Oxydendron arboreum* (L.), DC. Blowing Rock.  
*Andromeda ligustrina* (L.), Muhl.  
*Kalmia latifolia*, L. Blowing Rock.  
*Leiophyllum buxifolium* (Berg.), Ell., var. *prostratum* (Loud.), A. Gray., Grandfather mountain, Roan mountain, Table Rock.  
*Rhododendron arborescens* (Pursh), Torr. Wilson's creek.  
*Rhododendron calendulaceum* (Michx.), Torr. Blowing Rock.  
*Rhododendron Catawbiense*, Michx. Blowing Rock, Grandfather mountain.  
*Rhododendron maximum*, L. Blowing Rock.  
*Rhododendron punctatum*, Andr. Stone mountain, Table Rock.  
*Rhododendron Vaseyi*, A. Gray. Grandfather mountain.  
*Rhododendron viscosum* (L.), Torr. Hickory, and near Cranberry.

- Pyrola rotundifolia*, L. Near Cranberry.  
*Chimaphila maculata* (L.), Pursh. Blowing Rock.  
*Clethra acuminata*, Michx. Blowing Rock.  
*Monotropa uniflora*, L. Blowing Rock.  
*Hypopitys Monotropa*, Crantz. Blowing Rock.  
*Galax aphylla*, L. Blowing Rock, Table Rock.  
*Lysimachia quadrifolia*, L. Blowing Rock.  
*Steironema lanceolatum* (Walt.), Gray. Hickory.  
*Symplocos tinctoria* (L.), L'Her. Blowing Rock.  
*Halesia tetraptera*, L. Aunt Sallie's Ridge.  
*Fraxinus Americana*, L. Falls of the Yadkin.  
*Fraxinus pubescens*, Lam. Heilig's Mill.  
*Fraxinus viridis*, Michx. f. Heilig's Mill.  
*Chionanthus Virginica*, L. Stone mountain.  
† *Ligustrum vulgare*, L. Blowing Rock, John's River Valley.  
*Asclepias exaltata* (L.), Muhl. Blowing Rock, Linville.  
*Asclepias incarnata*, L., var. *pulchra* (Ehrh.), Pers. Faith P. O.  
*Asclepias obtusifolia*, Michx. Hickory.  
*Asclepias quadrifolia*, L. Blowing Rock.  
*Asclepias tuberosa*, L. Blowing Rock, Hickory.  
*Asclepias variegata*, L. Blowing Rock.  
*Asclepias verticillata*, L. Faith P. O., Falls of the Yadkin.  
*Gonolobus Carolinensis* (Jacq.), R. Br. Roanoke, Va.  
*Gonolobus hirsutus*, Michx. Faith P. O.  
*Sabbatia angularis* (L.), Pursh. Heilig's Mill.  
*Sabbatia paniculata* (L.), Pursh. Faith P. O.  
*Phlox amœna*, Sims. Hickory.  
*Phlox glaberrima*, L. Fall creek, Va., and near Cranberry.  
*Phlox maculata*, L. Danville, Va.  
*Phlox ovata*, L. Fall creek, Va.  
*Phlox reptans*, Michx. Grandfather mountain.  
*Hydrophyllum Canadense*, L. Blowing Rock.  
*Hydrophyllum Virginicum*, L. Blowing Rock, Grandfather mountain.  
*Phacelia bipinnatifida*, Michx. Blowing Rock.  
*Heliotropium Indicum*, L. Falls of the Yadkin.  
*Cynoglossum officinale*, L. Doe river, Tenn.  
*Myosotis laxa*, Lehm. Doe river, Tenn.

- Onosmodium Carolinianum* (Lam.), DC. Fall creek, Va.  
*Ipomœa lacunosa*, L. Heilig's Mill.  
*Convolvulus repens*, L. Shull's Mill.  
*Solanum Carolinense*, L. Blowing Rock.  
*Physalis Philadelphica*, Lam. Shull's Mill.  
*Linaria Canadensis* (L.), Dumont. Danville, Va.  
*Scrophularia nodosa*, L., var. *Marylandica* (L.), A. Gray. Blowing Rock.  
*Chelone Lyoni*, Pursh. Grandfather mountain.  
*Pentstemon lævigatus*, Soland. Heilig's Mill.  
*Pentstemon lævigatus*, Soland., var. *canescens*, Britt. Roanoke, Va., Hickory.  
*Mimulus alatus*, Soland. Heilig's Mill.  
*Herpestis nigrescens*, Benth. Heilig's Mill.  
† *Veronica Anagallis*, L. Roan Station, Tenn., Cranberry.  
*Gerardia lævigata*, Raf. Blowing Rock, Roan mountain.  
*Gerardia pedicularia*, L., var. *pectinata*, Nutt. Heilig's Mill.  
*Castilleja coccinea* (L.), Spreng. Heilig's Mill.  
*Melampyrum lineare*, Lam. Cranberry.  
*Aphyllon uniflorum* (L.), A. Gray. Blowing Rock.  
*Conopholis Americana* (L. f.), Wallr. Shull's Mill.  
*Bignonia capreolata*, L. Heilig's Mill, Falls of the Yadkin.  
*Tecoma radicans* (L.), Juss. Heilig's Mill.  
*Martynia proboscidea*, Glox. Faith P. O.  
*Ruellia ciliosa*, Pursh. Heilig's Mill.  
*Ruellia strepens*, L. Roanoke, Va.  
*Verbena angustifolia*, Michx. Roanoke.  
*Verbena officinalis*, L. Hall's Store, Heilig's Mill, Hickory, Roan Station, Tenn.  
*Verbena riparia*, Raf. John's River valley, Falls of the Yadkin.  
*Lycopus Virginicus*, L. Blowing Rock.  
*Pycnanthemum Tullia*, Benth. Blowing Rock, Heilig's Mill, Richland Valley.  
*Calamintha Clinopodium*, Benth. Cranberry.  
*Calamintha Nepeta* (L.), Link. Faith P. O.  
*Monarda clinopodia*, L. Blowing Rock.  
*Monarda didyma*, L. Grandfather mountain, Roan mountain, Tenn.

- Blephilia hirsuta* (Pursh), Benth. Blowing Rock.  
*Scutellaria integrifolia*, L. Hickory.  
*Scutellaria nervosa*, Pursh. Roanoke, Va.  
*Scutellaria pilosa*, Michx. Hickory, Aunt Sallie's Ridge.  
*Brunella vulgaris*, L. Blowing Rock.  
*Physostegia Virginiana* (L.), Benth., var. *speciosa* (Sweet.), A. Gray. Faith P. O.  
*Marrubium vulgare*, L. Roanoke, Va., Roan Station.  
*Stachys aspera*, Michx. Blowing Rock, Grandfather mountain.  
*Isanthus brachiatus* (L.), B.S.P. Faith P. O.  
*Paronychia argyrocoma*, Nutt. Blowing Rock, Stone mountain.  
*Anychia Canadensis* (L.), B.S.P. Blowing Rock.  
*Polygonum Hydropiper*, L. Blowing Rock.  
*Polygonum hydropiperoides*, Michx. Heilig's Mill.  
*Polygonum Persicaria*, L. Blowing Rock.  
*Fagopyrum esculentum*, Moench. Grandfather mountain.  
*Rumex Acetosella*, L. Blowing Rock.  
*Asarum arifolium*, Michx. Heilig's Mill.  
*Asarum Canadense*, L. Grandfather mountain.  
*Asarum Virginicum*, L. Fall Creek, Va., Blowing Rock.  
*Asarum Virginicum*, L., var. *grandiflorum*, Mx. Wilson's creek.  
*Aristolochia Sipho*, L'Her. On the Watauga river.  
*Pyrularia pubera*, Michx. Wilson's creek.  
† *Euphorbia marginata*, Pursh. Salisbury.  
*Ulmus alata*, Michx. Falls of the Yadkin.  
*Morus rubra*, L. Roanoke, Va.  
*Platanus occidentalis*, L. Heilig's Hill.  
*Juglans nigra*, L. Faith P. O.  
*Betula lutea*, Michx. f. Blowing Rock.  
*Alnus viridis*, DC. Roan mountain, Tenn.  
*Carpinus Americana*, Lam. Roan mountain, Tenn.  
*Quercus aquatica*, Walt. Falls of the Yadkin.  
*Castanea pumila*, Michx. Blowing Rock.  
*Microstylis unifolia* (Michx.), B.S.P. Blowing Rock.  
*Liparis liliifolia* (L.), Rich. Richland Valley, Wilson's creek.  
*Tipularia unifolia* (Muhl.), B.S.P. Falls of the Yadkin.  
*Bletia aphylla*, Nutt. Heilig's Mill.  
*Listera convallarioides*, Nutt. Shull's Mill.



- Speiranthes gracilis*, Bigel. Heilig's Mill, Stone mountain.  
*Goodyera pubescens* (Willd.), R. Br. Blowing Rock.  
*Goodyera repens* (L.), R. Br. Grandfather mountain.  
*Calopogon tuberosus* (L.), B.S.P. Hickory, Table Rock.  
*Pogonia divaricata* (L.), R. Br. Blowing Rock, Grandfather mountain, Hickory, Table Rock.  
*Pogonia verticillata* (Willd.), Nutt. Wilson's creek.  
*Habenaria ciliaris* (L.), R. Br. Gold Hill.  
*Habenaria fimbriata* (Ait.), R. Br. Roan mountain.  
*Habenaria flava* (L.), A. Gray. Roan mountain, Tenn.  
*Habenaria orbiculata* (Pursh), Torr. Blowing Rock, Grandfather mountain.  
*Cypripedium acaule*, Ait. Blowing Rock.  
*Cypripedium pubescens*, Willd. Cranberry.  
*Aletris farinosa*, L. Stone mountain.  
*Sisyrinchium angustifolium*, Mill. Cranberry.  
*Sisyrinchium angustifolium*, Mill., forma *albiflorum* (Raf.), Britt. Fall creek, Va.  
*Smilax Bona-nox*, L. Heilig's Mill.  
*Smilax glauca*, Walt. Blowing Rock.  
*Smilax rotundifolia*, L. var. *crenulata*, Small and Heller. Grandfather mountain, Richland Valley.  
*Polygonatum biflorum* (Walt.), Ell. Blowing Rock.  
*Streptopus roseus* (Pers.), Michx. Grandfather mountain.  
*Allium cernuum*, Roth. Blowing Rock.  
*Allium mutabile*, Michx. Heilig's Mill.  
*Allium tricoccum*, Ait. Grandfather mountain, Roan mountain.  
*Allium vineale*, L. Hickory.  
*Lilium superbum*, L. Grandfather mountain.  
*Chamælirium luteum* (L.), A. Gray. Fall creek, Va., Blowing Rock.  
*Xerophyllum asphodeloides* (L.), Spreng. Blowing Rock, Grandfather mountain, Table Rock.  
*Uvularia puberula*, Michx. Blowing Rock.  
*Disporum lanuginosum* (Michx.), Britt. Blowing Rock, Grandfather mountain.  
*Clintonia borealis* (Ait.), Raf. Grandfather mountain.  
*Clintonia umbellata* (Poir.), Torr. Grandfather mountain.

- Trillium erectum*, L. Grandfather mountain.  
*Melanthium parviflorum* (Michx.), S. Wats. Blowing Rock,  
 Grandfather mountain.  
*Zygadenus leimanthoides*, A. Gray. Grandfather mountain.  
*Amianthium angustifolium* (Michx.), A. Gray. Hickory.  
*Amianthium muscætoxicum* (Walt.), A. Gray. Blowing Rock,  
 Cranberry, Table Rock.  
*Commelina hirtella*, Vahl. Heilig's Mill.  
*Tradescantia pilosa*, Lehm. Blowing Rock.  
*Juncus acuminatus*, Michx. Roan Station, Tenn.  
*Juncus dichotomus*, Ell. Hickory.  
*Juncus marginatus*, Rostk. Roan Station, Tenn., Hickory.  
*Juncus scirpoides*, Lam. Heilig's Mill.  
*Juncus setaceus*, Rostk. Heilig's Mill.  
*Juncus tenuis*, Willd. Roan Station, Tenn., Grandfather mountain.  
*Luzula campestris* (L.), DC. Stone mountain, Table Rock.  
*Arisæma polymorphum* (Buckl.), Chap. Grandfather mountain.  
*Eriocaulon decangulare*, L. Hickory.  
*Cyperus flavescens*, L. Heilig's Mill.  
*Cyperus ovularis* (Vahl), Torr. Heilig's Mill.  
*Cyperus retrofractus*, (Torr.), A. Gray. Falls of the Yadkin.  
*Cyperus strigosus*, L. Heilig's Mill.  
*Kyllingia pumila*, Michx. Heilig's Mill.  
*Eleocharis ovata* (Roth), R. Br. Roan Station, Tenn.  
*Fimbristylis capillaris* (L.), A. Gray. Stone Mountain.  
*Scirpus cæspitosus*, L. Roan mountain, Table Rock.  
*Scirpus polyphyllus*, Vahl. Richland Valley.  
 †*Scirpus sylvaticus*, L. Hickory.  
*Rhynchospora cymosa* (Willd.), Nutt. Stone Mountain.  
*Carex æstivalis*, M. A. Curtis. Roan Mountain, Tenn., Blowing  
 Rock.  
*Carex debilis*, Michx. Grandfather mountain.  
*Carex Fraseri*, Andrews. Aunt Sallie's Ridge, Grandfather  
 mountain, Richland Valley.  
*Carex juncea*, Willd. Roan mountain.  
*Carex Pennsylvanica*, Lam. Roan mountain, Tenn.  
*Carex rosea*, Schk. Blowing Rock.

- Carex scoparia*, Schk. Blowing Rock.  
*Carex vulpinoidea*, Michx. Hickory.  
*Andropogon dissitiflorus*, Michx. Heilig's Mill.  
*Paspalum Floridanum*, Michx. Faith P. O.  
*Paspalum læve*, Michx. Heilig's Mill.  
*Panicum clandestinum*, L. Heilig's Mill.  
*Panicum commutatum*, Schultes. Fall creek, Va.  
*Panicum depauperatum*, Muhl. Blowing Rock.  
*Panicum dichotomum*, L. Blowing Rock, Table Rock, Stone mountain,  
*Panicum microcarpon*, Muhl. Hickory, Wilson's creek.  
*Panicum scoparium*, Lam. Hickory.  
*Panicum viscidum*, Ell. Hickory.  
*Setaria glauca* (L.), Beauv. Blowing Rock.  
*Stipa avenacea*, L. Fall creek, Va.  
*Sporobolus Indicus* (L.), R. Br. Hickory.  
*Agrostis perennans* (Walt.), Tuck. Grandfather mountain.  
*Deschampsia flexuosa* (L.), Griseb. Roan Mountain.  
*Arrhenatherum elatius* (L.), Mert. and Koch. Blowing Rock.  
*Danthonia compressa*, Austin. Blowing Rock.  
*Eleusine Ægyptiaca* (L.), Pers. Falls of the Yadkin.  
†*Eatonia Dudleyi*, Vasey. Shull's Mill.  
*Eatonia Pennsylvanica* (Spreng.), A. Gray. Fall creek, Va.  
*Poa compressa*, L. Green's Hill, (Blowing Rock).  
*Glyceria elongata* (Torr.), Trin. Grandfather mountain.  
*Festuca Myurus*, L. Danville, Va., Heilig's Mill.  
*Festuca octoflora*, Walt. Danville, Va.  
*Lolium temulentum*, L. Heilig's Mill.  
*Pinus echinata*, Mill. Heilig's Mill.  
*Pinus pungens*, Michx. f. Blowing Rock.  
*Pinus rigida*, Mill. Rocky Knob.  
*Picea Mariana* (Mill.), B.S.P. Grandfather mountain.  
*Tsuga Canadensis* (L.), Carr. Blowing Rock.  
*Tsuga Caroliniana*, Engelm. Blowing Rock.  
*Abies Fraseri*, Lindl. Grandfather mountain.  
*Juniperus Virginiana*, L. Heilig's Mill.  
*Selaginella rupestris* (L.), Spring. Blowing Rock, Table Rock.  
*Lycopodium lucidulum*, Mx. Grandfather mountain.

*Lycopodium obscurum*, L. Grandfather mountain.

*Lycopodium Selago*, L. Roan mountain.

*Botrychium Virginianum* (L.), Sw. Shull's Mill, Grandfather mountain.

*Polypodium vulgare*, L. Grandfather mountain.

*Polypodium incanum*, Pursh. Blowing Rock, Falls of the Yadkin, Wilson's creek.

*Asplenium Filix-fœmina* (L.), Bernh. Grandfather mountain.

*Asplenium montanum*, Willd. Blowing Rock, Grandfather mountain.

*Asplenium parvulum*, Mart. and Gal. Falls of the Yadkin.

*Asplenium platyneuron* (L.), Oakes. Aunt Sallie's Ridge, Falls of the Yadkin.

*Asplenium Trichomanes*, L. Falls of the Yadkin.

*Aspidium marginale* (L.), Sw. Stone mountain.

*Aspidium spinulosum*, Sw., var. *dilatatum* (Sw.), Hook.

*Dicksonia punctilobula* (Michx.), A. Gray. Blowing Rock.

## LIST OF MOSSES.

BY JOHN K. SMALL.

Not much attention could be paid to the collecting of mosses, but specimens were picked up here and there on the journey, and the following list, giving the stations at which each species was gathered, may be of use and interest. My thanks are due to Mrs. Britton for help in the determination of some of the difficult species and corrections on my work.

*Sphagnum cymbifolium*, Ehrh. Swamp near Hickory.

*Sphagnum rigidum*, Schimp. Swamp near Hickory.

*Sphagnum* ———. Sandy bank of Wilson's creek.

*Andreæa rupestris*, Turn. Summit of Table Rock mountain.

*Dicranella heteromalla* (L.), Schimp. Blowing Rock mountain, Grandfather mountain.

*Dicranum flagellare*, Hedw. Grandfather mountain, Blowing Rock mountain.

*Dicranum fulvum*, Hooker. Blowing Rock mountain, Watauga river, Grandfather mountain.

*Dicranum scoparium* (L.), Hedw. Blowing Rock mountain.

*Leucobryum glaucum* (L.), Schimp., var. *albidum*, W. & M. Blowing Rock mountain.

*Ditrichum pallidum* (Schreb.), Hampe. Hickory.

*Grimmia campestris*, Burchell. Rocky Knob mountain.

*Grimmia Pennsylvanica*, Schwægr. Along Watauga river, Grandfather mountain.

*Racomitrium aciculare* (L.), Brid. Grandfather mountain.

*Weissia Americana* (Beauv.), Lindb. Rocky Knob mountain, Table Rock mountain.

*Weissia crispula* (Bruch.), Lindb. Grandfather mountain.

*Weissia Ludwigii* (Brid.). Blowing Rock mountain.

*Weissia ulophylla*, Ehrh. Grandfather mountain, Blowing Rock mountain.

*Bartramia pomiformis*, Hedw. Grandfather mountain.

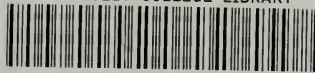


- Philonotis fontana* (L.), Brid. Table Rock mountain, Grandfather mountain.
- Bryum roseum*, Schreb. Grandfather mountain.
- Mnium rostratum*, Schwægr. Grandfather mountain.
- Mnium cuspidatum*, Hedw. Blowing Rock mountain.
- Polytrichum formosum*, Hedw. Grandfather mountain, Blowing Rock mountain.
- Neckera pennata*, Hedw. Grandfather mountain, Aunt Sallie's ridge, Blowing Rock mountain.
- Leucodon brachypus*, Brid. Blowing Rock mountain, Rocky Knob mountain, Grandfather mountain.
- Leucodon julaceus* (Hedw.), Sulliv. Heilig's Mill P. O., Gold Hill.
- Leskea tristis*, Cesat. On rocks near the Watauga river.
- Anomodon apiculatus*, Bruch. & Schimp. Grandfather mountain, Blowing Rock mountain.
- Anomodon attenuatus*, Hueben. Aunt Sallie's ridge, Blowing Rock mountain.
- Anomodon obtusifolius*, Bruch. & Schimp. Grandfather mountain, Blowing Rock mountain.
- Anomodon rostratus*, Schimp. Blowing Rock mountain.
- Pylaisia velutina*, Bruch. & Schimp. Blowing Rock mountain.
- Hypnum Boscii*, Schwægr. Along Bear creek.
- Hypnum brevirostre*, Ehrh. Grandfather mountain.
- Hypnum chrysophyllum*, Brid. Blowing Rock mountain.
- Hypnum chrysophyllum*, Brid., var. *minus* (Sulliv and Lesq.) Blowing Rock mountain.
- Hypnum cupressiforme*, L. Blowing Rock mountain.
- Hypnum curvifolium*, Hedw. Grandfather mountain.
- Hypnum delicatulum*, L. Grandfather mountain.
- Hypnum eugyrium*, Schimp. Grandfather mountain.
- Hypnum filicinum*, L. Grandfather mountain.
- Hypnum gracile*, Bruch. and Schimp. Grandfather mountain.
- Hypnum gracile*, Bruch. and Schimp., var. *Lancastriense*, Sulliv. and Lesq. Blowing Rock mountain.
- Hypnum imponens*, Hedw. Crossing of the Blue Bidge, Grandfather mountain.
- Hypnum lætum*, Brid. Blowing Rock mountain, Grandfather mountain.

- Hypnum micans*, Sw., var. Summit of Roan and Grandfather mountains.
- Hypnum orthocladon*, Beauv. Crossing of the Blue Ridge.
- Hypnum pallescens*, Beauv. Blowing Rock mountain, Aunt Sallie's ridge, Grandfather mountain.
- Hypnum pallescens*, Beauv., var. *protuberans* (Brid.) Grandfather mountain.
- Hypnum plumosum*, Sw. Aunt Sallie's ridge, Grandfather mountain.
- Hypnum recognitum*, Hedw. Grandfather mountain, Rock Knob mountain.
- Hypnum recurvans*, Schwægr. Blowing Rock mountain, Grandfather mountain.
- Hypnum rugosum*, L. On the "Blowing Rock."
- Hypnum scitum*, Beauv. Aunt Sallie's ridge, Blowing Rock mountain.
- Hypnum serpens*, L. Blowing Rock mountain.
- Hypnum serrulatum*, Hedw. Grandfather mountain.
- Hypnum proliferum*, L. Grandfather mountain.
- Hypnum Sullivantii*, Spruce. Table Rock mountain.
- Hypnum triquetrum*, L. Grandfather mountain.
- Hypnum velutinum*, L. Grandfather mountain.
- Hypnum nemorosum*, Koch. Grandfather mountain.
- Hypnum salebrosum*, Hoffm. Grandfather mountain.
- Hypnum radicale*, Beauv. Blowing Rock and Grandfather mountains.
- Plagiothecium denticulatum* (L.), Br. and Sch. Grandfather mountain.



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